

Title: Dynamics of the M. tuberculosis SOS Response

Christian Forst  
Los Alamos National Laboratory

Abstract:

In order to understand the behavior of gene regulatory networks, it is essential to identify the corresponding genes and their interactions. We have developed a method to identify novel gene interactions utilizing response network construction by statistical network analysis. We apply our systems biology approaches on M. tuberculosis. We finally use the static gene-regulatory response network to construct a dynamic model of the SOS response using piecewise linear differential equations. We have tested our gene interaction prediction in the case of the novel SOS gene Rv2719c by differential predictive modeling showing the important influence of this gene.